

**HANDLE STRUCTURE AND LCD ARRANGEMENT OF A DVD
PLAYER AND MOLD FOR MOLDING SAID HANDLE
STRUCTURE ON SAID LCD CASE**

BACKGROUND OF THE INVENTION

5 1. Field of the Invention:

The present invention relates to a DVD player having a LCD for video output and more particularly, to a handle structure and LCD arrangement of a DVD player, which comprises a handle structure directly molded on the LCD case of the DVD player.

10 2. Description of the Related Art:

DVD player is a product of high-tech following the development of electronic technology and video media. It is popularly invited for the advantages of high mobility and capable of playing of digital video disks and the like anywhere. For easy
15 carrying by hand, a DVD player is equipped with a handle. As shown in FIG. 1, a handle **91** is fastened to the back side of the LCD case **90** with screws. The handle **91** has a flange **92** curved forwardly downwards for grasping of the hand. Because the handle **91** is fastened to the LCD case **90** with screws, the installation of
20 the handle complicates the fabrication procedure of the DVD player. After a long use, the tie screws may loose, and the handle may vibrate or drop from the LCD case. Further, because the tie screws are not kept from sight, they destroy the sense of beauty of the

DVD player.

Therefore, it is desirable to provide a handle structure and LCD arrangement of a DVD player that eliminates the aforesaid drawbacks.

5 SUMMARY OF THE INVENTION

The present invention has been accomplished under the circumstances in view. It is the main object of the present invention to provide a handle structure and LCD arrangement of a DVD player, which has the handle structure directly molded on the LCD
10 case to save the manufacturing cost of the DVD player. It is another object of the present invention to provide a handle structure and LCD arrangement of a DVD player, which has the handle structure formed integral with the LCD case, causing a sense of beauty.

To achieve these and other objects of the present invention,
15 the handle structure and LCD arrangement of a DVD player comprises a LCD case, a handle structure, and a mold adapted to mold the handle structure on the LCD case. The handle structure comprises a transversely extended top grip with a downwardly extended outer flange, a support, and a hand hole defined between
20 the top grip and the support. The mold is formed of a female defining a cavity and a male die having a protruding portion insertable into the cavity.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a rear elevational view of a DVD player showing a handle structure provided at the back side of the LCD case according to the prior art.

5 FIG. 2 is a rear elevational view of a DVD player showing a handle structure provided at the back side of the LCD case according to the present invention.

FIG. 3 is a rear side view of the present invention.

FIG. 4 is a side view in section of a part of the present
10 invention.

FIG. 5 is a schematic drawing showing the female die and the male die closed according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 2, 3, and 4, a handle structure and LCD
15 arrangement of a DVD player is shown comprising a LCD case 10 formed of a front shell and a back shell, and a handle structure 20 provided at the LCD case 10. The handle structure 20 comprises a transversely extended top grip 21 and a bottom support 22 molded on the LCD case 10 near the top side, and a hand hole 25 defined
20 between the top grip 21 and the bottom support 22. The top grip 21 protrudes perpendicularly from the LCD case 10 to a distance over the width between the LCD case 10 and the vertical outer wall 23 of the bottom support 22, and terminates in a downwardly extended

flange **211** convenient for the grasping of the hand.

Referring to FIG. 5, the aforesaid handle structure **20** is molded from plastics by means of the use of a female die **30** and a male die **40**. The female die **30** comprises a cavity **31** adapted to
5 mold the top grip **21**. The male die **40** comprises a protruding portion **41** corresponding to the cavity **31** of the female die **30**. When closed the female die **30** and the male die **40**, the protruding portion **41** of the male die **40** is inserted into the lower side of the cavity **31** of the female die **30**, thereby defining the cavity **31** into a
10 transversely extended top molding space **311** and a vertically extended side molding space **312** adapted to mold the top grip **21** and the downwardly extended flange **211** (see also FIG. 4).

When closed the female die **30** and the male die **40**, a longitudinal molding space **32** is defined in between the female die
15 **30** and the male die **40** and spaced below the transversely extended top molding space **311**, and an angled molding space **33** is defined in between the female die **30** and the male die **40** and forwardly curved from the bottom side of the longitudinal molding space **32** and then turned vertically downwards at an offset location relative
20 to the vertically extended side molding space **312**. The transversely extended top molding space **311** and the vertically extended side molding space **312** are adapted to mold the bottom support **22** and the vertical outer wall **23**.

As indicated above, the handle structure of the present invention is directly molded on the LCD case of the DVD player by means of the aforesaid female die and male die. Because the handle structure is directly molded on the LCD case, it causes a sense of
5 beauty.

A prototype of handle structure and LCD arrangement of a DVD player has been constructed with the features of FIGS. 2~5. The dehydrator functions smoothly to provide all of the features discussed earlier.

10 Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited except as by the appended claims.

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